



A RESOURCE ENGINEERING COMPANY

696 VIRGINIA ROAD, CONCORD, MA 01742, (617) 369-8910

Superfund Records Center

SITE: Wells 9 & 11

BREAK: 3.2

OTHER: 549612

*environmental and engineering excellence*



SDMS DocID

549612

ERT Document No. D495-005

ERT Reference No. 510-JTL-737

January 7, 1988

Ms. Barbara Newman  
Region I  
U.S. Environmental Protection Agency  
JFK Federal Building  
Boston, Massachusetts 02203

Re: UniFirst Corporation, Woburn, Massachusetts

Dear Ms. Newman:

This letter describes the objectives and means of performing a deeper-bedrock aquifer test at the UniFirst Corporation site in Woburn, Massachusetts. This aquifer test, as referenced in my letter of December 21, 1987 regarding the shallow-bedrock aquifer test, will further the understanding of the hydraulics of the bedrock aquifer in the site area. The proposed work is based on the findings to date derived from the continuing investigation and discussion among UniFirst's technical consultants and the EPA. The following sections reiterate the scope of work that has recently been discussed with the EPA in several telephone conversations.

#### OBJECTIVE

In order to investigate the potential for effective source-control remedial action that will remove dissolved product and contain ground-water-borne compounds within the site, it will be necessary to investigate the hydraulic characteristics of the deeper bedrock in the site area and the concentrations of selected ground-water-borne compounds. These data together with the data

Ms. Barbara Newman  
Page Two  
January 7, 1988

derived from the shallow-bedrock aquifer test will provide some of the information necessary for the evaluation of the potential for ground-water recovery wells and a treatment system for possible source-control remedial action.

#### DESCRIPTION OF THE WORK

The deeper-bedrock aquifer pump test will be carried out in a new well that will be drilled adjacent to well UC-9, which is located in the northeast corner of the property as illustrated on the enclosed map. This location has been chosen for several reasons: the bedrock encountered in well UC-9 is moderately fractured and therefore able to transmit ground water relatively efficiently to a depth of 190 feet; the analytical results from ground-water samples taken from well UC-9 indicate concentrations of dissolved chlorinated hydrocarbons to the full depth of the well (238 feet); and well UC-9 is located adjacent to, but not within areas in which evidence of free product has been observed. For these reasons, it is believed that pumping from this location will effect substantial removal of dissolved concentrations of chlorinated hydrocarbons, but not provide an avenue of vertical migration for free product.

The well will be drilled in the same manner as the shallow-bedrock observation wells (UC-15 through UC-20). That is D.L. Maher Company of North Reading, Massachusetts will drill an eight-inch nominal diameter well to an estimated depth of 190 feet using a Barber Company, Ltd. drill rig that collects the cuttings and discharges them in a controlled manner through a cyclone. These cuttings will be collected by Franklin Pumping Service, Inc. of Wrentham, Massachusetts and loaded into a sealed roll-off container. The cuttings will be monitored in the field with an HNu for evidence of free product, and a sample of the cuttings will be analyzed in the laboratory for volatile organic hazardous substance list compounds. Ultimate disposal methods for the cuttings will be determined by the analytical results.

An eight-inch nominal diameter has been chosen for this well because it will allow installation of six-inch diameter casing to a selected depth, thereby sealing off certain portions of the well for long term pumping. It is not known at this time whether sealing off portions of the well would be appropriate for effecting increased withdrawal efficiency. It will, however, allow for future flexibility in the ultimate design of this recovery well.

ERT

Ms. Barbara Newman  
Page Three  
January 7, 1988

An array of wells will be monitored prior to, during and after the pump test to measure prepumping static conditions, reaction to the pumping and recovery after pumping. It is currently anticipated that the following wells will be monitored either by installations of transducers, airline readings from Solinst devices and manual measurements from open borings: IUS-1, IUS-2A, IUS-3A, UC-4, UC-7, UC-8, UC-9, UC-10, UC-11, UC-12, UC-15, S-81, S-67, GO-1, GW-1D, GW-12D, GW-3D, Grace Well 21 deep. Measurements from these wells will be taken on varying schedules dependent upon the method of measurement available. The transducer systems will measure levels continuously, the Solinst devices and manual measurements will be taken approximately on an hourly basis.

A series of initial (before pumping) ground-water-level measurements will be taken in all wells to determine if there are diurnal effects and to ensure that ground-water levels have stabilized after installation of transducers. The pumping rate will be determined by performing step-drawdown tests. The well will be allowed to recover completely between each test. It is anticipated that the pumping phase of the aquifer test will continue for 72 hours at the calculated rate, or until the handling capacity for the discharge water has been achieved.

The discharge from the new eight-inch well will be sampled and analyzed for volatile, base/neutral and acid extractable organic compounds, total suspended solids, iron, manganese, and hardness upon initiation of pumping and at approximately eight-hour intervals until the end of pumping. The analyses will be performed according to appropriate EPA procedures at ERT's laboratory in Wilmington, Massachusetts. Standard quality control and quality assurance protocols will be observed for all sampling and analytical work. The discharge water will be collected in a DOT approved tanker. The discharge water will be handled, manifested and transported by Franklin Pumping Service, Inc. of Wrentham, Massachusetts. The ultimate means of disposal/destruction will be determined by the results of the laboratory analyses. All handling, transportation and disposal/destruction will be carried out by appropriately licensed companies.

#### SCHEDULE

ERT currently proposes to commence installation of the well beginning on January 12, 1988. Initial static readings for the

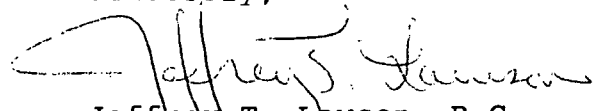
ERT

Ms. Barbara Newman  
Page Four  
January 7, 1988

pump test will be undertaken during the week of January 13, 1988.  
The pump test itself is scheduled to begin the week of January 25, 1988.

Should you have any questions regarding the proposed work, please do not hesitate to call me.

Sincerely,



Jeffrey T. Lawson, P.G.  
Senior Program Manager

JTL/cjr

cc: David Delaney (EPA)  
Gretchen Muench, Esq. (EPA)  
John A. Cherry, Ph.D. (University of Waterloo)  
Jeffrey C. Bates, Esq. (Goodwin, Procter & Hoar)  
Nancer Ballard, Esq. (Goodwin, Procter & Hoar)  
Gary Augustyn, (UniFirst)

ERT